

What is claimed is:

1. A method for determining the predisposition of a human subject to develop autoimmune disease, said method comprising detecting at least one polymorphic microsatellite repeat (PMR) in the human costimulatory receptor gene locus, wherein the PMR sequence is not an hR2 sequence, to thereby determine the predisposition of a human subject to develop autoimmune disease.
2. The method of claim 1, wherein a PMR sequence is selected from the group consisting of SEQ ID Nos.: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 44, 48, 51, 54, 57, 60, 63, 66, 69, 72, 75, 78, 81, 84, 87, 90, 93, 96, 99, 102, 105, 108, 111, 114, 117, 120, 123, 126, 129, 132, 135, 138, 141, 144, 147, 150, 153, 156, 159, 162, 165, 168, 171, 174, 177, 180, 183, 186, 189, 192, 195, 198, 201, 204, 207, 210, 213, 216, 219, 222, 225, 228, 231, 234, 237, 240, 243, 246, 249, 252, 255, 258, 261, 264, 267, 270, 273, 276, 279, 282, 285, 288, 291, 294, 297, 300, 303, 306, 309, 312, 315, 321, 324, 327, 330, 333, 336, 339, 342, 345, 348, 351, 354, 357, 360, 363, 366, and 369.
3. The method of claim 1, wherein a PMR sequence is selected from the group consisting of SEQ ID Nos.: 303, 306, 309, 312, 315, 321, 324, 327, 330, 333, 336, 339, 342, 345, 348, 351, 354, 357, 360, 363, 366, and 369.
4. The method of claim 2 wherein the autoimmune disease is selected from the group consisting of: insulin-dependent diabetes mellitus (IDDM), Addison's disease, Graves' disease, autoimmune hypothyroidism, myasthenia gravis, thymoma, lupus, thyroiditis, postpartum thyroiditis, rheumatoid arthritis, Hashimoto's disease, coeliac disease and leprosy.
5. The method of claim 2, wherein the step of detecting is performed using a polymerase chain reaction (PCR) employing a first and second primer.
6. The method of claim 5, wherein the first or second primer comprises a sequence selected from the group consisting of SEQ ID Nos.: 301, 302, 304, 305,

307, 308, 310, 311, 313, 314, 316, 317, 319, 320, 322, 323, 325, 326, 328, 329, 331, 332, 334, 335, 337, 338, 340, 341, 343, 344, 346, 347, 349, 350, 352, 353, 355, 356, 358, 359, 361, 362, 364, 365, 367, and 368.

5 ~~7.~~ A method for determining the predisposition of a human subject to autoimmune disease, said method comprising detecting an hR1 PMR sequence to thereby determine the predisposition of a human subject to autoimmune disease.

8. The method of claim 7, wherein the autoimmune disease is selected
10 from the group consisting of insulin-dependent diabetes mellitus (IDDM), Addison's disease, Graves' disease, autoimmune hypothyroidism, myasthenia gravis, thymoma, lupus, thyroiditis, postpartum thyroiditis, rheumatoid arthritis, Hashimoto's disease, coeliac disease and leprosy.

15 9. The method of claim 7 wherein said detecting is performed using PCR employing a first and second primer.

~~10.~~ A method for determining the polymorphic variant or subtype of a PMR sequence in the costimulatory receptor locus in a human subject, said method
20 comprising detecting at least one polymorphic microsatellite repeat (PMR) in the human costimulatory receptor gene locus, wherein the PMR sequence is not an hR2 sequence to thereby determine the polymorphic variant or subtype of a PMR sequence in the costimulatory receptor locus in a human subject.

25 11. The method of claim 10, wherein a PMR sequence is selected from the group consisting of SEQ ID Nos.: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 44, 48, 51, 54, 57, 60, 63, 66, 69, 72, 75, 78, 81, 84, 87, 90, 93, 96, 99, 102, 105, 108, 111, 114, 117, 120, 123, 126, 129, 132, 135, 138, 141, 144, 147, 150, 153, 156, 159, 162, 165, 168, 171, 174, 177, 180, 183, 186, 189, 192, 195, 198, 201, 204, 207, 210,
30 213, 216, 219, 222, 225, 228, 231, 234, 237, 240, 243, 246, 249, 252, 255, 258, 261, 264, 267, 270, 273, 276, 279, 282, 285, 288, 291, 294, 297, 300, 303, 306, 309, 312, 315, 321, 324, 327, 330, 333, 336, 339, 342, 345, 348, 351, 354, 357, 360, 363, 366, and 369.

12. The method of claim 11, wherein the step of detecting is performed using PCR employing a first and second primer.

5 ~~13.~~ A PCR primer capable of amplifying a PMR sequence in the costimulatory receptor locus of a human subject, wherein the primer comprises a nucleotide sequence selected from the group consisting of: SEQ ID NO: 301, 302, 304, 305, 307, 308, 310, 311, 313, 314, 316, 317, 319, 320, 322, 323, 325, 326, 328, 329, 331, 332, 334, 335, 337, 338, 340, 341, 343, 344, 346, 347, 349, 350, 352, 353, 10 355, 356, 358, 359, 361, 362, 364, 365, 367, and 368.

14. A method for determining the predisposition of a human subject to develop autoimmune disease, said method comprising detecting at least one single nucleotide polymorphism (SNP) in the human costimulatory receptor gene locus, to 15 thereby determine the predisposition of a human subject to develop autoimmune disease.